

# INTERNATIONAL SEARCH REPORT

International Application No  
PCT/US 03/36568

**A. CLASSIFICATION OF SUBJECT MATTER**

IPC 7 C23C16/06	C23C16/18	C07F19/00	C07C237/00
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According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C23C C07C C07F
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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	GB 2 295 392 A (ASS OCTEL) 29 May 1996 (1996-05-29) abstract; claims 1,3 -----	1-13
A	GB 2 295 393 A (ASS OCTEL) 29 May 1996 (1996-05-29) abstract; claim 1 page 1 -----	1-13
A	US 5 834 058 A (BARKER JAMES ET AL) 10 November 1998 (1998-11-10) abstract; claims 1,8,13 page 1 -----	1-13
		-/-

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

\* Special categories of cited documents :

- \*A\* document defining the general state of the art which is not considered to be of particular relevance
- \*E\* earlier document but published on or after the international filing date
- \*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- \*O\* document referring to an oral disclosure, use, exhibition or other means
- \*P\* document published prior to the international filing date but later than the priority date claimed

- \*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- \*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- \*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
- \*&\* document member of the same patent family

Date of the actual completion of the International search

9 December 2004

Date of mailing of the International search report

13.01.05

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## INTERNATIONAL SEARCH REPORT

Int'l Application No  
PCT/US 03/36568

## C(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	BARKER J ET AL: "N,N'-Unsubstituted amidinato metallacycle complexes of Group 13 metal alkyls: the crystal structure of trimeric '{Me <sub>2</sub> Al(mu-HNCPhNH)} <sub>3</sub> !'" JOURNAL OF ORGANOMETALLIC CHEMISTRY, ELSEVIER-SEQUOIA S.A. LAUSANNE, CH, vol. 586, no. 2, 5 September 1999 (1999-09-05), pages 138-144, XP004183020 ISSN: 0022-328X the whole document	1-13
A	US 5 235 078 A (POHL LUDWIG ET AL) 10 August 1993 (1993-08-10) abstract column 1, line 22 - line 56	1-13
X	FRANK T. EDELMANN: COORDINATION CHEMISTRY REVIEWS, vol. 137, 1994, pages 403-481, XP002309880	14, 16, 18
A	page 457 page 460 page 467	15, 17, 19
X	JOSEPH A.R. SCHMIDT ET AL.: "First-row transition metal complexes of sterically-hindered amidinates" J.CHEM.SOC., DALTON TRANS., vol. 2002, 15 August 2002 (2002-08-15), pages 3454-3461, XP002309881 page 3454	16, 18
P, X	AZWANA R. SADIQUE, ET AL.: "A weak, short metal-metal bond in a chromium(II) amidinate complex" J.AM.CHEM.SOC., vol. 2003, no. 125, 6 June 2003 (2003-06-06), pages 7774-7775, XP002309882 page 7774	16
X	SHIBAYAMA K ET AL: "LIVING POLYMERIZATION OF CARBODIIMIDES INITIATED BY COPPER(I) AND COPPER(II) AMIDINATE COMPLEXES" MACROMOLECULES, AMERICAN CHEMICAL SOCIETY. EASTON, US, vol. 30, no. 11, 2 June 1997 (1997-06-02), pages 3159-3163, XP000691132 ISSN: 0024-9297 page 3160	14
	-/-	

**INTERNATIONAL SEARCH REPORT**Int'l Application No  
PCT/US 03/36568**C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT**

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	JAMES BARKER ET AL.: "The coordination chemistry of the amidine ligand" COORDINATION CHEMISTRY REVIEWS, vol. 133, 1994, pages 219-300, XP002309883 page 271 -----	14
A	MARTYN P. COLES, ET AL: "synthesis and structures of mono- and bis(amidinate) complexes of aluminum" ORGANOMETALLICS, vol. 16, 1997, pages 5183-5194, XP002309884 the whole document -----	14-19

## INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

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Patent document cited in search report		Publication date		Patent family member(s)		Publication date
GB 2295392	A	29-05-1996	NONE			
GB 2295393	A	29-05-1996	NONE			
US 5834058	A	10-11-1998	AU DE DE EP WO	7270694 A 69414257 D1 69414257 T2 0712409 A1 9504063 A1	28-02-1995 03-12-1998 25-03-1999 22-05-1996 09-02-1995	
US 5235078	A	10-08-1993	DE DE EP JP	4009394 A1 59010508 D1 0432574 A2 3190884 A	13-06-1991 24-10-1996 19-06-1991 20-08-1991	

## INTERNATIONAL SEARCH REPORT

national application No.  
PCT/US 03/36568

### Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1.  Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
  
2.  Claims Nos.:  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
  
3.  Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

### Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1.  As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
  
2.  As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
  
3.  As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
  
4.  No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

#### Remark on Protest

- The additional search fees were accompanied by the applicant's protest.
- No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-13

Use of volatile metal amidinates in a process in which a heated substrate is exposed alternately to vapors of the amidinate and to vapors of a further reactant, for example for deposition of a metal, a nitride or an oxide layer.

2. claims: 14-19

Volatile metal amidinates comprising only one type of amidine ligand as its ligands.